

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Pressure Switch**

with type designation(s)

Series 8000 / 9000; Series KLM / KLK

Issued to

Barksdale GmbH**REICHELSEIM WETTERAU, Germany**

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Location classes:****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:****Temperature D****Humidity B****Vibration B****EMC B****Enclosure B**Issued at **Hamburg** on **2019-04-12**for **DNV GL**This Certificate is valid until **2024-04-11**.DNV GL local station: **Augsburg**Approval Engineer: **Holger Jansen****Joannis Papanuskas****Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-015076-3**
Certificate No: **TAA0000200**
Revision No: **1**

Product description

Compact Pressure Switches

Series 8000:	8xxx (diaphragm or piston pressure switch)
Process connection:	G1/4", 1/4" NPT, Cetop flange
Pressure range:	0.4...6 bar up to 80...600 bar
Electrical connection:	PL1, PL2, PL3, PL4 or cable CAx
Contact rating:	Output 1x c/o Silver contacts: 125/250VAC: 2A inductive, 5A resistive 30VDC, 2A inductive, 5A resistive 250VDC: 0.03A inductive, 0.2A resistive Gold contacts: ≤300mV: ≤400mA resistive; ≤30VDC: ≤4mA resistive
Series 9000:	9xxx (piston pressure switch)
Process connection:	G1/4", 1/4" NPT, Cetop flange
Pressure range:	0.2...2 bar up to 40...400 bar
Electrical connection:	PL1, PL2, PL3, PL4 or cable CAx
Contact rating:	Output 1x c/o Silver contacts: 250VAC, 2.5A inductive, 10A resistive 24VDC: 1A inductive, 6A resistive
Series KLM:	KLM-xxx-x-x (diaphragm pressure switch)
Pressure range:	1...6 bar up to 10...40 bar
Process connection:	G1/4", 1/4" NPT, M12x1.5, M18x1.5, 7/16-20UNF
Electrical connection:	S1, ST0, ST1, A5, V3, V5, or cable Kx
Contact rating:	Output 1x c/o Silver contacts: 30VDC: 3A inductive, 5A resistive 50VDC: 1A inductive, 1A resistive
Series KLK:	KLK-xxx-x-x (piston pressure switch)
Pressure range:	30...100 bar up to 150...400 bar
Process connection:	G1/4", 1/4" NPT, M12x1.5, M18x1.5, 7/16-20UNF
Electrical connection:	S1, ST0, ST1, A5, V3, V5, or cable Kx
Contact rating:	Output 1x c/o Silver contacts: 30VDC: 3A inductive, 5A resistive 50VDC: 1A inductive, 1A resistive

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Degree of protection: IP65 / IP 67 (depending on connector type)

Job Id: **262.1-015076-3**
Certificate No: **TAA0000200**
Revision No: **1**

Type Approval documentation

Data sheets : Series 8000 Compact Pressure Switches; 923-1295 Rev N
Series 9000 Compact Pressure Switches; 923-1647 Rev I
Serie 8000 Sales-Drawing, Catalogue: 05/03 KDM-DE 03/1, 03/05 S8000 DE 03/01
Operating Instructions Compact Pressure Switches Series 8000, 923-1302, Rev. S
Operating Instructions Compact Pressure Switches Series 9000, 923-1650, Rev. F
Test reports : BFSV- Test Reports:, 5527/05, dated 2005-02-08; 5527A/05, dated 2005-02-08;
0973/14, dated 2014-10-17; 5641a/05, dated 2005-06-22; 6706/09, dated 2009-04-17;
6761/09, dated 2009-07-02
Test protocol: Barksdale PN-14-0024, Barksdale Pressure Test Certificates
Drawings: 922-1025, 923-1304, 923-1961, 923-1571, 922-0018, 922-0510, 922-1208
Type Approval Assessment Report 2019-02-11.

Tests carried out

Applicable tests according to DNV GL Class Guideline CG0339, November 2016.

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE